Jewel of Echo
Environmental Assessment

General Instructions

It shall be the responsibility of the subdivider to submit the information required by this Section with the preliminary plat. This Environmental Assessment format shall be used by the applicant in compiling a thorough description of the potential impacts for the proposed subdivision. Each question pertinent to the proposal must be addressed in a full comprehensive and systematic fashion (both maps and text). Incomplete Environmental Assessments will not be accepted.

The Environmental Assessment will be objectively measured to assure that all mandatory elements are included and that, based upon objective standards, all prospective impacts are adequately addressed. At a minimum the Environmental Assessment must contain the following for all assessment contents:

a. A summary of probable impacts and statement of impact for each environmental consideration topic;
b. A discussion to support the statement of impact;
c. Referenced sources and citations to support the statement of impact;
d. If applicable, site specific maps and documentation to support the statement of impact discussion.

If, at any time during the application process, material information comes to light that is not addressed in the Environmental Assessment, the subdivider shall be required to amend the environmental Assessment to adequately address the issue. In this event the 60 working day review period is suspended and will not resume until the revised Environmental Assessment has been submitted, reviewed and approved by the Planning and Zoning Office. Following review and acceptance of the amended Environmental Assessment, the application process will resume at the same stage of the 60 working day review period that the original application was before the additional information came to light.

Environmental Assessment Contents

There are two major sections to the Environmental Assessment. The first section incorporates the natural systems provisions of 76-3-603 and 76-3-608, MCA. The second section evaluates the impacts to the human community and incorporates 76-3-608(3)(a) criteria for public health, safety, and local services. The sources of information for each section of the Assessment shall be identified. All Environmental Assessments shall contain the signature, date of signature and mailing address of the owner of the property and the person, or persons, preparing the report and citation and a copy of all supporting information. . (**Note**: Any response to any section not specifically sourced in this report is attributed to the Author of the report.)

Section 1 – Resource Assessment and Impact Criteria Report

a. Surface Water:

i. Locate on the preliminary plat all surface water and the delineated 100 year floodplain(s) which may affect or be affected by the proposed subdivision including:

The Jewel of Echo subdivision is located on Echo Lake. There is a tiny ribbon of floodplain around the lake but there is no Base Flood Elevation to define the floodplain. The majority of the lake frontage is fairly abrupt making lake fluctuations a non-factor to any proposed building sites. See attached FIRMette 2310J 11/4/15.

A. All natural water systems such as perennial and intermittent streams, lakes and ponds, rivers, or marshes.

Each of Lots 2 -5 have more than 400 feet of lakeshore frontage Lot 1 only has about 44 feet of frontage. Echo Lake is a naturally occurring lake with no defined outlet. The lake is primarily recharged by groundwater.

B. All artificial water systems such as canals, ditches, aqueducts, reservoirs, irrigation or drainage systems.

There are no artificial water systems such as, canals, ditches, reservoirs, or shared agricultural irrigation systems on the subject parcel. There no artificial water impoundments associated with the property at present. The property is not part of an irrigation district or shared irrigation facilities.

ii. Describe all probable impacts to surface waters which may affect or be affected by the proposed subdivision including name, approximate size, present use, and time of year when water is present and proximity of proposed construction (e.g. buildings, sewer systems, and roads) to surface waters.

Echo Lake is a large natural lake located in Flathead County. The property is zoned SAG-5 in the Bigfork Zoning District. The SAG-5 zoning designation establishes a minimum lot size of five acres gross. The proposed subdivision meets the prescribed minimum lot size when many of the neighboring lakefront lots on Echo Lake do not. With this proposed subdivision application we have included extensive review of the proposed stormwater and wastewater systems to be used in the development. The analysis shows that the systems will meet the Montana

Department of Environmental Standards and be much more effective than many of the old systems located on the lake.

iii. Describe any existing or proposed stream bank or shoreline alterations or any proposed construction or modification of lake beds or stream channels. Provide information on location, extent, and purpose of alteration. If any construction or changes are proposed which require a 310 Permit from the Flathead County Conservation District the subdivider shall acknowledge that the permit is required and will be obtained prior to final plat.

They applicant is not proposing any alterations or dock with the proposed subdivision. It will be up to each future Lot owner to read the Flathead County Lake and Lakeshore Protection Regulations and make application for any improvements they wish to add to the lake front.. The County's Lakeshore regulate the Lake and 20-horizontal feet landward of the mean annual high water mark.

iv. If wetlands are present, the subdivider shall provide a map showing wetland areas. A wetlands investigation completed by a qualified consultant, using the most current U.S. Army Corps of Engineers' Wetlands Delineation Manual may be required. If any construction or changes are proposed which require a 404 Permit, the subdivider shall acknowledge that the permit is required and will be obtained.

There are no wetlands located on the property.

b. Ground Water:

i. Establish the seasonal minimum and maximum depth to water table, dates on which these depths were determined, and the location and depth of all known aquifers which may be affected by the proposed subdivision. Monitoring may be waived if evidence of minimum and maximum groundwater elevations can be documented.

406 Engineering Inc. witnessed the excavation of 5 test holes on this property on October 25, 2019. The test holes were excavated to a depth of 12 feet. Groundwater was not observed in any test hole. As observed in the test-hole logs, the soils are consistent from lot to lot and have an adequate soil type for disposal of sewer effluent. See Appendix A for test hole data.

ii. If determined from subsection (b)(i) above that any area within the proposed subdivision is within eight feet of the surface, the high water table shall be measured from tests taken during the period of the highest

groundwater elevations, generally from March 15 through June 30, during average precipitation years and reported in the environmental assessment.

Groundwater monitoring is not included as there was no groundwater observed.

iii. Describe any steps necessary to avoid probable impacts and the degradation of ground water and ground water recharge areas as a result of the subdivision.

Any of the probable impacts to groundwater quality are associated with the on-site wastewater systems proposed or the stormwater drainage system. The wastewater treatment sewer systems proposed for the subdivision are Septic Net systems which produce 7.5 mg/L per each drainfield system. Between the five lots, only 37.5 mg/L will be produced which is under the required 50 mg/L for a standard drainfield system. The sewer systems will not degrade ground water or ground water recharge areas.

The stormwater management system is also designed to the MDEQ standards. According to the Storm Drainage Plan prepared by 406 Engineering, the proposed development will increase storm water peak runoff rates or volumes as compared to the historical use, but will be contained via. roadside ditches and retention ponds. This is demonstrated utilizing storm water runoff estimation methods referenced from the Rational Method and Modified Rational Method. Storm water will follow existing flow patterns across the site and storm water runoff generated from the proposed roadway will be contained within roadside ditches and individual retention ponds on each lot.

c. Geology/Soils:

i. Locate on the preliminary plat any known geologic hazards affecting the subdivision which could result in property damage or personal injury due to rock falls or slides, mud, snow; surface subsidence (e.g., settling or sinking); and seismic activity.

The proposed development is located in an area of gently rolling peninsula on Echo Lake. There are some isolated areas along the lakeshore of Lots 2-4 that approach 40%. The protect the lake, lakeshore and future landowners, these areas are designated no-build areas on the plat. This limitation would not preclude landscape features, walkways and docks provided they comply with the County's Lakeshore Regulations. (See attached Preliminary Plat with Topographic survey information prepared by Sands Surveying, Inc.)

There is no danger of rock slides, mud slides, or avalanche on the property. The property is not located on a geologic fault line.

ii. Explain what measures will be taken to prevent or materially lessen the danger and probable impacts of future property damage or personal injury due to any of the hazards referred to above.

To address the slopes approaching 40% along the lakeshore area of Lots 2-4, those areas will be identified on the plat and labeled as "no build" zones.

iii. Explain any unusual soil, topographic or geologic conditions on the property which limit the capability for building or excavation using ordinary and reasonable construction techniques. The explanation should address conditions such as shallow bedrock, high water table, unstable or expansive soil conditions, and slope. On the preliminary plat identify any slopes in excess of 40 percent.

The proposed subdivision is vacant grass and forest land. The soils consist generally of medium sand. The test holes indicate that there is no shallow bedrock or any detectable bedrock on the site and that the water table is greater than 12.00 feet.

iv. Identify any soils constraints, including probable impacts due to expansive soils, hydric soils, or any soils which limit sanitary facilities. Explain special design considerations and methods needed to overcome the soil limitations.

406 Engineering Inc. observed the excavation of 5 test holes on the site and documented the soils found in the holes. Based on a review of all soil descriptions and subsequent soil reports, there does not appear to be any significant constraints for proposed building, road or wastewater treatment system construction. Standard design considerations will be followed for the identified soil types for sanitary facilities, including drainfield application rates. No special design considerations are anticipated to be necessary. (See Appendices A)

v. Describe the location and amount of any cut or fill three or more feet in depth. These cuts and fills should be indicated on a plat overlay or sketch map. Where cuts or fills are necessary, describe any plans to prevent erosion and to promote re-vegetation such as replacement of topsoil and grading.

The area where the road will be located is gently rolling, and any cut and fill depths are not anticipated to exceed three feet. There is an operation

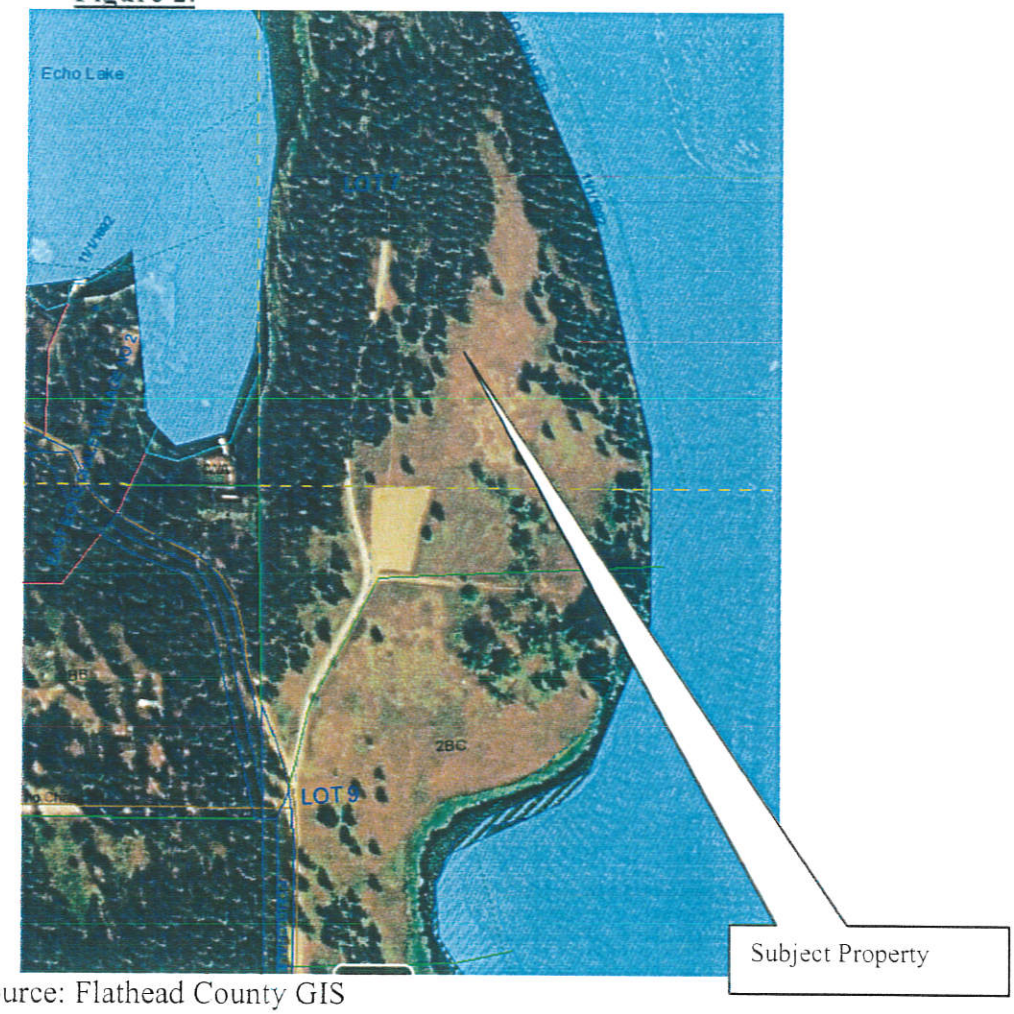
and maintenance section located in the DEQ lot layout to alleviate erosion from taking place.

d. Vegetation:

i. On a sketch map or aerial photo indicate the distribution of the major vegetation types such as marsh, grassland, shrub, coniferous forest, deciduous forest, mixed forest, including critical plant communities such as stream bank or shore line vegetation; vegetation on steep, unstable slopes; vegetation on soils highly susceptible to wind or water erosion.

The property is a mix of grass land and forest lands. All of the lots with the exception of Lot 1 have large open grass areas. There is shoreline vegetation, primarily shrubs but also spruce, alder, and cottonwood. (See Aerial Photo, Figure 2).

Figure 2.



Source: Flathead County GIS

ii. Identify locations of noxious weeds and identify the species of weeds and explain measures to control weed invasion.

For the most part, there are not many weeds on the property. We anticipate the standard condition require the development and approval of a weed management plan. The developer, and future lots owner will take over weed management when the subdivision is complete. (See Appendix F – Draft CC&R's)

iii. Describe any probable impacts and any protective measures to preserve trees and critical plant communities (e.g., design and location of roads, lots and open spaces).

The lot in the subdivision are all over five acres in size and the best views are from the grassy knoll on Lots 2 – 5. There should be minimal tree removal with the development of the subdivision as most of the development would be contained within a half-acre of the five acre parcel.

e. Wildlife:

To write this section of the EA, the wildlife maps prepared by Flathead County GIS with cooperation by Montana FW&P were consulted. The Montana Natural Heritage Program was consulted for Species of Concern data. Jessy Coltrane, Wildlife Biologist, of Fish, Wildlife and Parks, was sent an email of the plat and a request for comment on June 9, 2020 regarding the potential impacts. Ms. Coltrane responded on June15th (See Coltrane Response Appendix B).

i. Describe species of fish and wildlife which use the area affected by the proposed subdivision.

Various birds species and signs of whitetail deer were witnessed on the property during a site visit. Other species of wildlife that use the site including: raccoon, coyote, other small mammals, and a diversity of bird species. Echo Lake is considered a warm water fishery and has over the years been planted with bass, perch, and pike. FWP also plants trout in the lake. The property is not grizzly bear or other large predator habitat as much of the lake has been developed with fairly dense home and cabin development. However these large predators do move through this area on occasion to search for food or when looking for new range.

The Montana Heritage Program (MHP) provided a search of its records of Species of Concern (SOC) for a nine square mile area around the proposed subdivision site. According to the Montana Heritage Program, there are seven species of concern sighted in the nine square mile search area (MHP, Environmental Summary, Species Occurrence Map). The heron

and eagle are attracted to the lake because of the prey offered. The proposed subdivision does not contain any nesting sites for these two species. The Finch is said to occupy cotton wood and ponderosa, lodgepole, and grassland of which there are all these habitats on the property as well as neighboring properties. The Fisher is part of the weasel family prefer dense forests. There are no dense forests on this property but there are such habitats approximately two miles east. The grizzly bear is a species that moves through this area in search of food but does not stay in these areas due to the presence of significant concentrations of humans The plant species, Giant Helleborine, is suited for the Echo Lake area as it prefers saturated calcareous solid of warm seeps and springs where the ground does not freeze hard. Although Echo Lake has a number of these habitats, the subject property is more upland habitat and does not contain any seeps of springs. The large lot nature of the subdivision should limit any impact species listed in the Summary as these large lots are typically only developed around the house and the remainder of the property is left in its native state providing room and habitat for animal and plant species. (The full MHP response is included as Appendix B)

Photo 1

ii. Identify on the preliminary plat any known critical or "key" wildlife areas, such as big game winter range, waterfowl nesting areas, habitat for rare or endangered species, or wetlands.

The subject property is gently rolling with some slopes approaching 40% along the lakeshore. The property has approximately 1800 feet of lakeshore footage which is sensitive habitat for many species. Otherwise there are no "key" wildlife habitats on the property.

iii. Identify rare and endangered species on-site. Describe the impacts and measures to mitigate the impact(s), or submit a statement explaining why no impact is anticipated, providing documentation to support that statement.

The Montana Heritage Program (MHP) provided a search of its records of Species of Concern (SOC) for a nine square mile area around the proposed subdivision site. According to the Montana Heritage Program, there are seven species of concern sighted in the nine square mile search area (MHP, Environmental Summary, Species Occurrence Map). The heron and eagle are attracted to the lake because of the prey offered. The proposed subdivision does not contain any nesting sites for these two species. The Finch is said to occupy cotton wood and ponderosa, lodgepole, and grassland of which there are all these habitats on the property as well as neighboring properties. The Fisher is part of the weasel family prefer dense forests. There are no dense forests on this property but there are such habitats approximately two miles east. The grizzly bear is a species that moves through this area in search of food but does not stay in these areas due to the presence of significant concentrations of humans The plant species, Giant Helleborine, is suited for the Echo Lake area as it prefers saturated calcareous solid of warm seeps and springs where the ground does not freeze hard. Although Echo Lake has a number of these habitats, the subject property is more upland habitat and does not contain any seeps of springs. The large lot nature of the subdivision should limit any impact species listed in the Summary as these large lots are typically only developed around the house and the remainder of the property is left in its native state providing room and habitat for animal and plant species. (The full MHP response is included as Appendix B)

iv. Describe any probable impacts and proposed measures to protect or enhance wildlife habitat or to minimize degradation (i.e.., keeping building and roads back from shorelines; setting aside marshland as undeveloped open space).

As previously stated there is approximately 1800 feet of lakeshore within the subdivision. However this lakeshore is spread mostly over four of the five lots and the subdivision is meeting the minimum five acre lot size prescribed by zoning. The zoning limits the density per lot to a residence and potentially a guest house or accessory dwelling if wastewater regulations can be met. Flathead County Administers the Flathead county Lake and Lakeshore Protection Regulations which are intended to limit development and encroachment on the lakeshore and into the lake. For example the regulations only allow a single dock per lot of record and the docks must meet certain setbacks and size limitations. The limited density and regulations address lakeshore and lake development should minimize any environmental impacts the proposed subdivision might produce.

v. It is recommended that the subdivider discuss the impact of the proposed development on fish and wildlife with the Department of Fish, Wildlife and Parks (FWP) and incorporate any recommendations from the agency to mitigate wildlife impacts.

A copy of the Jewel of Echo preliminary plat and short explanation was emailed to Fish, Wildlife, and Parks for comment on June 9, 2019. Ms. Coltrane responded on June 15th indicating FWP recommends any lake development have a setback of 250-feet. She also referred me to fisheries biologist Kenny Brendinger which I did and Kenney referred me to Leo Rosenthal whom I emailed but have not heard anything back. Regarding the suggested 250-foot setback, no regulated lake in Flathead County has a 250-foot setback. Whitefish Lake with the most stringent regulation only requires 30-feet and every other lake requires 20-feet of setback. Much of Echo Lake is developed and at a much higher density than the five acre minimum lot size proposed with this subdivision, so why should these five lots be singled out for 250-feet when no other property owner on Echo Lake has anything close to the suggested setback. We believe the large lot size and limited development potential under the SAG-5 zoning will mitigate possible wildlife impacts associated with this subdivision.

f. Wildlife Habitat

i. Proposed subdivisions that are contiguous to urbanized areas are presumed to have minimal impacts of wildlife habitat.

The proposed subdivision is not in the urban confines of Bigfork but it is located within a fairly populated area of Echo Lake. Many of the lots in along the south and east sides of Echo Lake sit on half acre lots. Most of these lots predate zoning which in 1993 establish the current five acre density the proposed subdivision is complying. Given the concentration of homes in the general area one cannot presume that this subdivision could have any significant impact on adjacent wildlife habitat.

ii. Proposed subdivision in locations with riparian areas, wetlands, rivers, streams, lakes, or other natural surface waters are presumed to have an impact on wildlife habitat. Describe the impact(s) and measures to mitigate the impact(s), or submit a statement explaining why no impact is anticipated, providing documentation to support that statement.

The property is located along the shore of Echo Lake. The subject property is zoned and the density prescribed is one dwelling per five acres. The proposed subdivision is in compliance with the SAG-5 zoning. With the exception of Lot 1 each lot has over 400 feet of lake frontage. There is ample room on the property to preserve and protect the riparian vegetation and at the same time provide recreational access to the lake for the future property owners. Most of the lots around Echo Lake are less than an acre in size and contain only 100 feet of frontage. The prescribed density and size of the lots should mitigates impacts to the riparian environment.

iii. Proposed subdivisions in an area with rare or endangered species, as identified by state or federal agencies, are presumed to have an impact on the habitat of these species. Describe the impacts(s) and measures to mitigate the impact(s), or submit a statement explaining why no impact is anticipated, providing documentation to support that statement.

The Montana Heritage Program (MHP) provided a search of its records of Species of Concern (SOC) for a nine square mile area around the proposed subdivision site. According to the Montana Heritage Program, there are seven species of concern sighted in the nine square mile search area (MHP, Environmental Summary, Species Occurrence Map). The heron and eagle are attracted to the lake because of the prey offered. The proposed subdivision does not contain any nesting sites for these two species. The Finch is said to occupy cotton wood and ponderosa, lodgepole, and grassland of which there are all these habitats on the property as well as neighboring properties. The Fisher is part of the weasel family prefer dense forests. There are no dense forests on this property but there are such habitats approximately two miles east. The grizzly bear is a species that moves through this area in search of food but does not stay in these areas due to the presence of significant concentrations of humans The plant species, Giant Helleborine, is suited for the Echo Lake area as it prefers saturated calcareous solid of warm seeps and springs where the ground does not freeze hard. Although Echo Lake has a number of these habitats, the subject property is more upland habitat and does not contain any seeps of springs. The large lot nature of the subdivision should limit any impact species listed in the Summary as these large lots are typically only developed around the house and the remainder of the property is left in its native state providing room and

habitat for animal and plant species. (The full MHP response is included as Appendix B)

iv. Proposed subdivisions on or adjacent to land identified by state or federal agencies as critical habitat are presumed to have an impact on wildlife habitat. Describe the impact(s) and measures to mitigate the impacts(s), or submit a statement explaining why no impact is anticipated, providing documentation to support that statement.

Echo Lake is a sensitive environment, as any lake would be, but it is not considered as a critical habitat. The applicant is developing the property at the rural, low density of one unit per five acres. The density is prescribed to lessen the impact on Echo Land water quality and riparian vegetation.

g. Agriculture and Timber Production:

i. On a sketch map locate the acreage, type and agricultural classifications of soils.

The property is mapped by the 1960 Upper Flathead Valley Soils Survey and it identifies three soil types: Blanchard Loamy Fine Sand, 0 – 3 percent slopes (Bn) classified as a Class IVes-1 soil; Blanchard Loamy Fine Sand, 4 – 20 percent slopes (Bp) classified as a Class VIes-1 soil; and Blanchard Loamy Fine Sand, 20 – 45 percent slopes (Br) classified as a Class VIes-1 soil. Class IV soils can be cultivated regularly but only about 50% of these soils were ever cultivated in the Echo Lake area Class VI soils are not considered prime. (Source: 1960 Upper Flathead Valley Area Soils Survey)

The attached USDA Natural Resources Conservation Service, Web Soil Survey information is intended primarily for agricultural production (Figure 3).

Figure 3.

Map Unit Legend

Upper Flathead Valley Area, Montana (MT617)

Upper Flathead Valley Area, Montana (MT617)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bn	Blanchard loamy fine sand, 0 to 3 percent slopes	5.3	22.7%
Bp	Blanchard loamy fine sand, 7 to 20 percent slopes	2.9	12.2%
Br	Blanchard loamy fine sand, 20 to 45 percent slopes	15.1	64.3%
W	Water	0.2	0.8%
Totals for Area of Interest		**23.5**	**100.0%**

Source: USDA Natural Resources Conservation Service, Web Soil Survey and Soils Survey Upper Flathead Valley Area Montana, Issued September 1960.

ii. Identify and explain the history of any agricultural production of the by crop type and yield.

The property at one time was used for some livestock grazing and timber production. It has been many years since either of the activities were pursued.

iii. Describe the historical and current agricultural uses which occur adjacent to the proposed subdivision and explain any probable impacts and measures which will be taken to avoid or limit development conflicts with adjacent agricultural uses.

Currently the property is just used as private open space for the land owner and his friends and family. Most of the nearby agricultural use consist of grass hay and some livestock but mostly on properties of 40 acres or less. Larger agricultural holdings are located approximately a mile or more south and southeast. The immediate neighbors are primarily ranchettes, vacation/2nd home properties and urban scale single family residential. The proposed subdivision with five acre minium lot sizes will have no impact on area agricultural use.

v. If timbered, identify and describe any timber management recommendations which may have been suggested or implemented by a professional forester.

The homeowner/applicant has had the property for quite some time. They have had some Firewise thinning done in the past and for the most part, the property is managed.

h. Agricultural Water User Facilities:

i. On a sketch map or aerial photo, locate any agricultural water user facility, including but not limited to agricultural water works, wells, canals, irrigation ditches, and pump houses on-site or adjacent to the proposed subdivision.

There are no shared agricultural water works, canals, irrigation ditches, pump houses etc. The property is not located within an agricultural water district.

ii. Describe any agricultural water user facility on the site or in proximity that might be affected and explain any probable impacts(s) and measures which will be taken to avoid or mitigate probable impacts.

There are no shared agricultural water works, canals, irrigation ditches, pump houses etc that will be affected by the proposed subdivision.

iii. It is recommended that the subdivider discuss any impact of the proposed development on agricultural water user's facilities with irrigation and

company or organization controlling the facility and incorporate any recommendations from the agency to mitigate water user impacts

The property is not in an agricultural irrigation district or are there any agricultural irrigation districts or companies in proximity of the subdivision.

i. Historical Features:

i. Describe and locate on a plat overlay or sketch map any known or possible historic, paleontological, archeological or cultural sites, structures, or objects which may be affected by the proposed subdivision.

There are no standing structures on the property. The property owner who lives on the tract just north of the subdivision indicated that the old farm house for this property sits in the location of an old foundation (Photo 2). He also indicated that there used to be an old trailer house on the property that was used by the previous owners. The old farm house and the old trailer have been gone for many years.

Photo 2

ii. Describe any plans to protect such sites or properties.

There are no historic or culturally significant sites or structures on the property therefore there are no plans for protecting historical sites.

iii. Describe the impact of the proposed subdivision on any historic features, and the need for inventory, study and/or preservation and consultation with the State Historic Preservation Office (SHPO).

The State Historic Preservation Office (SHPO) was contacted regarding any cultural or historic features. SHPO responded (Project # 20200061013, Appendix C) stating that a search of their records did not show any Historic, Archaeological or Cultural sites located on the property. SHPO did not recommend that the developer conduct a cultural study of the property.

j. Visual Impact:

i. Describe any efforts to visually blend development activities with the existing environment.

The proposed subdivision is located on 25.7 acres. The property is zoned SAG-5 and the proposed lots meet the zoning. Most of the lots along the south and east sides of the lake are only a ½ to one acre in size. The proposed subdivision will completely blend with neighboring uses and densities.

Photo 3 – Notice the densities on the east show of the lake

Photo 4

k. Air Quality:

i. Describe any anticipated impact to air quality caused from dust or other air pollutants, including dust created by roads, and any means to mitigate the impact to air quality.

The subdivision road within the project will be constructed and paved to County Standards. Echo Chalet Drive is currently paved. Any dust generated by the development would be typical of a residential development. (See Dust Control Plan, Appendix D)

l. Area Hazards

i. Describe and locate on a plat overlay or sketch map any hazardous concerns or circumstances associated with the proposed subdivision site, including, but not limited to:

There are no known hazards associated with the proposed subdivision.

A. Any part of the proposed subdivision that is located within the Wildland Urban Interface priority area. If located in the Wildland Urban Interface or high fire hazard area identified by a local fire district or fire protection authority described probable impact(s) and measures to mitigate the impacts(s), or submit a statement why no impact is anticipated, providing documentation to support the statement.

The property located within the Wildland Urban Interface and Fire District priority area. (Flathead County GIS). See attached Wildland Urban Interface Plan.

B. Any potential hazardous materials contained on site, including high pressure gas lines, high voltage transmission lines, super fund sites, abandoned landfills, mines or sewer treatment plants, etc. In some cases an "Environmental Site Assessment" may be required.

There are no hazardous materials located on the site. The property's historic use was agricultural; there is no indication from walking the property that it was used for heavy industry or mining. There are no super fund sites or hazardous waste sites on or adjacent to the subject property (MDEQ and NRIS Search).

C. Describe measures to mitigate any adverse impacts associated with area hazards.

As no hazards were identified, no mitigation measures are proposed.

Part 2 - Community Impact Report (This portion of the Report was prepared in part with information provided by Foley Engineering, Brent Foley, P.E.)

a. Water Supply:

i. Describe the proposed water system and how water will be provided for household use and fire protection and the number of gallons needed to meet the needs of the anticipated final population.

The proposed water system for domestic and irrigation use are individual wells serving each of the lots. Based on an average domestic demand of 100 gallons per capita per day (gpd) combined with US census data of about 2.5 persons per home, a total of 1,250 gpd will be used to meet the average daily demand, which equates to 1.40 ac-ft per year.
If an average of 10,000 ft^2 of lawn is irrigated for each single-family lot, it is estimated 2.87 ac-feet of irrigation water is needed for the 5 lots annually.

ii. Indicate whether the plans for water supply meets state standards for quality, quantity and construction criteria.

As indicated previously, the water system will consist of individual wells. After initial conversations with MT DNRC, it does not appear that a water right will be required for the proposed subdivision. However, if it is determined that the domestic and irrigation demand for the subdivision could exceed 35 gallons per minute or 10 acre-feet per year, the applicant may eventually need to secure a water right for the proposed subdivision from the DNRC.

406 Engineering collected available well logs from Section 18 of T29N, R21W. The well depths all exceed minimum construction depths and DEQ and Montana Administrative Rules require well drilling companies to drill all new wells to meet state standards for construction criteria. A water sample of a nearby well showed adequate water quality. The surrounding well logs show ample water quantity with yields exceeding 20 gpm.(Appendix A).

iii. If the subdivider proposes to connect to an existing water system:

N/A – The subdivision will not connect to an existing water system as one is not immediately available.

A. Identify and describe that system.

N/A

B. Provide written evidence that permission to connect to that system has been obtained.
N/A

C. State the approximate distance to the nearest main or connection point.

The nearest water main is located near the intersection of Highway 35 and 82. That system is owned and operated by Bigfork Water and Sewer District. The Bigfork mains are approximately 4.5 road miles from the subject property

D. State the cost of extending or improving the existing water to service the proposed development.

N/A – The applicant will not extend Bigfork water to the subdivision.

E. Show that the existing water system is adequate to serve the proposed subdivision.

N/A.

iv. If a public water system is to be installed, discuss:

The water system consists of individual wells and therefore a public water system will not be installed to the subdivision.

A. Who is to install that system and when it will be completed?

The water wells will be installed by the lot owner/contractor when said owner is ready to build.

B. Who will administer and maintain the system at the beginning of subdivision development and when subdivision is completed.

The individual lot owners will be responsible for their individual wells.

C. Provision of evidence that the water supply is adequate in, quality, and dependability (75-6-102 MCA).

See responses to EA questions: a. Water Supply, i. and ii. above.

v. If individual water systems are to be provided, describe the adequacy of supply of the ground water for individual wells or cisterns and how this was determined.

Individual water systems are being proposed. Well log data provided in Appendix A indicates that there is adequate water for the proposed subdivision.

b. Sewage Disposal:

i. Describe the proposed method of sewage disposal and system.

The Jewel of Echo development proposes the use of individual septic systems for treatment of wastewater. Each lot has been tested for soils and groundwater. The test hole/groundwater data are included in Appendix A of this EA

ii. Indicate the number of gallons of effluent per day which will be generated by the proposed subdivision at its full occupancy, whether the proposed method of sewage disposal is sufficient to meet the anticipated final needs of the subdivision and whether it meets state standards.

Based on a total of 5 single-family lots, and an average daily wastewater flow of 250 gallons per day (gpd) per dwelling unit, the total average daily wastewater flow will be 1,250 gpd. All lots will be utilizing Septic Net Drainfield systems. The preliminary non-degradation analysis indicates that the wastewater treatment systems will not increase the effluent over 50 mg/l's designated for this tract utilizing septic net wastewater treatment systems which put out 7.5 mg/l's of effluent per system for a total of 37.5 mg/ls'.

iii. If the development will be connected to an existing public sewer system, include:

The proposed lots in the Jewel of Echo will not be connect to an existing public sewer system.

A. A description of that system and approximate distance from the nearest main or connection point to the proposed subdivision.

N/A

B. Written evidence that permission to connect to that system has been obtained.

N/A

iv. If a new public sewage disposal system, as defined under 75-6-102 MCA, is to be installed, discuss:

The applicants are not proposing a public system.

A. When the system will be completed, and how it will be financed.

N/A.

B. Who is to administer and maintain the proposed system at the beginning of subdivision development and when development is completed?

N/A.

c. Storm Water Drainage

i. Describe the proposed methods of storm water drainage for roads and other anticipated impervious surfaces, including storm water calculations.

Runoff water from the paved road in the Jewel of Echo Subdivision will flow to roadside vegetated ditches with gently graded 9:1 side-slopes to facilitate maintenance by the adjacent homeowners. No culverts will be needed as stormwater will discharge onto either side of the road and if the ditch overflows it will do so towards the opposite side of the road as the topography falls away from the road on each side. Individual retention ponds are located on each lot to retain the stormwater runoff associated from the impervious areas on each proposed lot. Flows will then be conveyed to an on-site individual lot location where flows will be retained to manage peak flows and volumes. The Storm Drainage Plan (Appendix A) indicates that storm water runoff rates and volumes will be more than that of the historical peak flow rates and volumes. No runoff water from new impervious or newly graded and vegetated surfaces will be discharged offsite at rates greater than the pre-developed rates.

Runoff from the driveways and front or roadside portions of the residences will flow to lawn or landscape areas within the respective lots. The driveways and front lawn and landscaped areas will be graded to drain to the roadside vegetated swales which will lead into retention ponds. (See stormwater runoff calculations in Appendix A).

ii. Describe the proposed methods of storm water drainage for other areas of the subdivision, including stormwater calculations.

Other areas of the subdivision will flow to the on-site individual retention facilities which are placed below the houses of the subdivision. Flows will be retained, eliminating any increase in peak flow rates and allowing for volume control of other areas.

iii. Identify the mechanism and who is responsible for maintenance of the storm water drainage system.

The individual residential lot owners will be responsible for runoff water generated on their own properties and for runoff water that flows from their lots onto adjacent roadside swales and individual on-site retention facilities. Individual lot owners will be responsible for maintenance of all roadside conveyance swales on their property, and individual on-site retention facilities.

d. Solid Waste Disposal:

i. Describe the proposed system of solid waste collection and disposal for the subdivision including:

The subdivision will use a contract hauler for refuse collection and hauling. The landfill is located along U.S. Highway 93 30 road miles northwest of the subject property.

A. Evidence that existing systems for collection and facilities for disposal are available and can handle the anticipated additional volume.

The Flathead County Growth Policy (2012 Update) provides Solid Waste projection in Chapter 7. According to the Growth Policy, the landfill has a capacity for current and future needs of 29 years if the increase in waste stream grows at 8% annually and 57 years if the waste stream grows at 2%. Based on the estimated capacity remaining as of July 2008, combined with current and projected inflow as well as diversion rates, the Flathead County Landfill is anticipated to reach capacity by 2055. Expanded recycling programs could be instituted within the County to increase the life expectancy of the landfill. In 2011 the Landfill acquired additional property adjacent to the landfill and is looking to acquire more property to provide up to 100 years of life.

B. A description of the proposed alternative where no existing system is available.

N/A

e. Roads

i. Describe any proposed new public or private access roads or substantial improvements of existing public or private access roads.

The Jewel of Echo will develop a road system to provide legal access to all 5 lots within the subdivision. The internal road system will be designed and paved to Flathead County Road Standards throughout. The subdivision road will have a single approach to Echo Chalet Drive, a paved private road providing access to a large number of homes located west of the proposed subdivision.

Photo 5 – Echo Chalet Drive looking north.

ii. Discuss whether any of the individual lots or tracts have access directly to arterial or collector roads; and if so, the reason access was not provided by means of a road within the subdivision.

All of the proposed lots have direct access to the internal subdivision road and none of the lots will have direct access to Echo Chalet Drive.

iii. Explain any proposed closure or modification of existing roads.

The proposed subdivision will not close or modify any existing roads. The Owner/Applicant, Mike and Julie Thompson own and live on the tract of land directly north of the proposed subdivision. The Thompson's will also get access through the subdivision utilizing their existing driveway, which cuts through a portion of Lot 5. The driveway will be located within an easement as shown on the preliminary plat and the subdivision will not block access to the Thompson's home.

iv. Identify existing primary road Average Vehicle Traffic and subdivision daily vehicle traffic assigned to that primary road.

The Flathead County Subdivision Regulations attribute ten vehicle trips per day to a single family dwelling. This number is loosely based on the ITE Trip Generation Manual which assigns 9.52 vehicle trips per day for a

single family detached dwelling. At ten vehicle trips per day the five lot subdivision would generate 50 vehicle trips per day at full buildout.

v. Describe provisions considered for dust control on roads.

The proposed subdivision road and cul-de-sac will be paved. The applicants submitted a dust abatement plan with the proposed subdivision application. (See Appendix D)

vi. Indicate who will pay the cost of installing and maintaining dedicated and/or private roadways.

The owners/developers will be responsible for construction of the new road system within Jewel of Echo, and following construction and filing of the final plat, the roads will be privately owned and be privately maintained by the Jewel of Echo Homeowners Association or Road Users Association.

vii. Discuss how much daily traffic will be generated on existing local and neighborhood roads and main arterial, when the subdivision is fully constructed.

Using the subdivision regulation trip generation number of ten vehicle trip per day, the subdivision would produce 50 vehicle trips per day at full buildout. Echo Chalet Drive ties into McCaffery Road approximately 1/3rd mile south of the subdivision. Most traffic will probably take a left on McCaffery to Echo Lake Road and out to Highway 82 and into Bigfork. A few cars may head west on McCaffery and head out to Highway 35. .

viii. Indicate the capacity of existing and proposed roads to safely handle any increased traffic. Describe any anticipated increased maintenance that will be necessary due to increased traffic and who will pay the cost of maintenance.

Echo Chalet Road is a privately maintained paved road. It is not very wide but there are numerous turnouts along the length of the road. It would appear that Echo Chalet can handle the five additional lots particularly considering that this road serves approximately 75 to 80 home sites presently.

ix. Explain whether year round access by conventional automobile will be available over legal rights of way to the subdivision and to all lots and common facilities within the subdivision.

The new road within the subdivision will be privately maintained by the Jewel of Echo HOA. Maintenance includes annual duties such as snow removal as well as long term duties such as asphalt repair and overlays. An informal association maintains Echo Chelate

f. Utilities:

i. Include a description of:

A. The method of furnishing electric, natural gas or telephone service, where provided.

Flathead Electric Co-op provides electrical power; CenturyLink provides telephone service.

B. The extent to which these utilities will be placed underground.

All utilities are installed underground.

C. Estimated completion of each utility installation.

The project is proposed in a single phase. The utilities will be installed at the time the subdivision is developed which could be the 2021 construction seasons.

g. Emergency Services:

i. Describe the emergency services available to the subdivision such as:

A. Is the proposed subdivision in an urban or rural fire district? If not, will one be formed or extended? In absence of a fire district, what fire protection procedures are planned?

The proposed subdivision is within the Bigfork Volunteer Fire District. The Echo Lake Fire Hall Substation approximately one road mile away on Echo Lake Road. The subdivision access is designed to County Standards.

B. Police protection.

The proposed subdivision will be served by the Flathead County Sheriffs Office. Chapter 7, Part 4, of the Flathead County Growth Policy, states that the Sheriff's Office has six divisions with 118 employees of which 48 are "on the ground" law enforcement officers responsible for the unincorporated portions of the County.

The Sheriff's Office runs three shifts in a 24 hour period with 4 to 6 officers on duty each shift.

C. Ambulance service/Medical services.

Ambulance service is provided by the Bigfork Volunteer Fire Department which has it's main station approximately six miles south in downtown Bigfork. Alert service is available and provided by Kalispell Regional Medical Center.

D. Give the estimated response time of the above services.

According to the Bigfork Volunteer Fire Department, the response times for fire or ambulance are adequate. The Sheriffs Office is located in Kalispell and response times will depend on whether or not there is a deputy in the area. .

E. Can the needs of the proposed subdivision for each of the above services be met by present personnel and facilities?

According to the Bigfork Fire Chief, provided the subdivision is designed and built to the County Road Standard, fire and ambulance service can be provided to this subdivision with existing personnel. The Flathead County Sherriff's Office provides a standard comment that they can meet the demands of the future growth but response times vary or may be slow depending on where personal happen to be when the call comes in and how many officers are available at the given time.

h. Schools:

i. Identify the School Districts and describe the available educational facilities which would service this subdivision.

The Jewel of Echo development lies within the Swan River Elementary School District #4 with K–8 Grades and 9-12 grades attending Bigfork High School. The 2019 Statistical Report from the Flathead county Superintendent of Schools Kalispell Elementary Schools indicates that the Swan Rover School saw a 14% increase in school enrollment over the 2018 school year and a 33% increase over the last 10 years or 3.3% per year. The Bigfork High School saw a 7% increase over the 2018 scool year and a 26% increase over the last 10 years for a 2.6% annual growth rate.

ii. Estimate the number of school children that will be generated from the proposed subdivision.

Using County wide average of 0.31 school aged children per residence. (There were 14,753 students recorded with the Flathead County Superintendent of Schools Office including public, private and home schooled children at the beginning of the 2011 school year. The US Census Bureau 2010 counted 46,963 housing units in Flathead County – 14,753 students / 46,963 housing units = 0.31 students per unit), the 5 residential lots would generate approximately two (2) students to the K – 12 grade school systems.

iii. The subdivider shall discuss the impact of the proposed development on the provision of educational services with the administrator(s) of the school system(s). The subdivider shall provide a written statement outlining whether the increased enrollment can be accommodated by the present personnel and facilities and by the existing school bus system, any recommendations of the administrator(s), and any mitigation planned to overcome any adverse impacts of the proposed development on the provision of educational services.

As the impact is so small for the applicable school districts I did not attempt to contact the school administrators to address any potential impact.

i. Land Use:

i. Describe comprehensive planning and/or land use regulations covering the proposed subdivision or adjacent land and if located near the jurisdictional area of an incorporated city or town, whether annexation is proposed.

The subject property is zoned SAG-5 and is part of the Bigfork Zoning District. The SAG-5 zoning classification is a suburban residential land use category with a minimum lot size of five acres. The proposed subdivision will comply with the zoning provisions and is not requesting any deviations to the zoning.

The property is within the influence of the Bigfork Neighborhood Plan which is a part of the Flathead county Growth Policy. See the following excerpts from the Bigfork Neighborhood Plan as it relates to the proposed Subdivision:

Part V Land Use and Natural Resorse
"In areas adjacent to residential designations with efficient service provision, convenient access to public facilities, paved roads and no environmental constraints, SAG-5 zoning is an appropriate use and density. As the smallest of the "agricultural" designation, small hobby

farms, horse pastures and rural single family residential dwellings exemplify areas where this zoning is used."

Residential Development

Goal .17 Accommodate increased growth through development that harmonizes with and enhances the natural environment, and protects wildlife habitat.

Goal 19 Encourage development to follow an overall design that is consistent with the nature, quality, and density of surrounding development.

Goal 22 insure a social and economic balance of health, safety and welfare while preserving the natural environment of the BPA.

Goal 24 Encourage development to use appropriate practices to preserve water quality, especially where affected by street run-off and septic systems, prevent erosion, control weeds, and promote fire safety in timbered areas.

P.24.2 Construction in 100-year floodplain, wetlands, and natural drainage areas shall not be permitted.

P.24.3 Development should provide appropriate setbacks, buffers, and other mitigations measures to protect lakes, rivers, streams, wetlands, floodplains, and other waterways from adverse effects of development.

P.24.5 Development shall protect the surface and subsurface waters from pollution and depletion through appropriate wastewater management systems and non-source pollution controls

The proposed subdivision complies with the provisions of the Bigfork Neighborhood Plan in the following ways:

- There are no undesirable health or safety risks on this property such floodplains, wetlands, or in an area of shallow groundwater.

The isolated areas of steel slopes are identified and protected with a "No-Build Zone"

- The subdivision is utilizing existing transportation connections thereby eliminating new approaches onto arterial and collector roads.
- The subdivision is complying with the prescribed density thereby reducing impacts on water quality of Echo Lake and disturbance of the natural environment
- The subdivision will comply with all setback and lakeshore regulations prescribed by Flathead County

- The proposed subdivision is not located in an area that has critical wildlife habitat
- The proposed subdivision is utilizing level II and septic net wastewater systems to protect ground and surface waters.

ii. Describe how the subdivision will affect access to any public lands. Where public lands are adjacent to or near the proposed development, describe present and anticipated uses for those lands; (e.g., grazing, logging, recreation, etc.).

There are no public lands adjacent to or near the proposed subdivision. The proposed subdivision will not alter or impact access to any public lands

iii. Describe the effect of the subdivision on adjacent land use.

Property around the proposed subdivision consists of similarly sized Suburban Agricultural lots to the south and north. To the west are 60 to 70 single family lots ranging in size from ½ acre to 2 acres. These homes are a mix of full time and part-time residents. To the east across Echo Lake the land use mimics that to the west. The proposed Suburban Agricultural density with single family homes on each lot should have no negative effect on neighboring landuse

iv. Describe any health or safety hazards on or near the subdivision, such as mining activity or potential subsidence, high pressure gas lines, dilapidated structures or high voltage power lines. Any such conditions should be accurately described and their origin and location identified. List any provisions that will be made to mitigate these hazards.

There are no such hazards located on the proposed Jewel of Echo property.

j. Housing:

i. Indicate the proposed use(s) and number of lots or spaces in each:

A. For residential indicate the type of dwelling unit.

The proposed development will consist of five single family homes on 25 acres.

B. For all other uses the type and intensity of use (e.g. industrial, commercial, etc.).

N/A no other type of use.

k. Parks and Recreation Facilities:

i. Describe park and recreation facilities to be provided within the proposed subdivision and other recreational facilities which will serve the subdivision.

As all of the lots exceed five acres gross, and are exempt from parkland dedication per Section 4.7.24 of the Flathead County Subdivision Regulations. With a lot of five acres in size there is ample room for families to recreate on their own land and since all of the lots have lake front, recreational activities such as swimming, boating, fishing, ice fishing, ice skating, and cross country skiing can occur on these properties.

l. Public Health and Safety:

i. Describe any probable impacts and any measures to mitigate the impacts, or submit a statement explaining why no impact is anticipated, providing documentation to support that statement that might affect public health and safety that aren't specifically addresses in other sub –sections of the environmental assessment.

Other than those mentioned in this EA, there are no other impacts and therefore mitigations that would impact the Public Health and Safety.

Prepared By: Eric H. Mulcahy Date: 8/4/2020

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EA APPENDICIES

A. Design Reports for Water, Wastewater and Drainage, 406 Engineering;.
B. Species of Concern Data, Montana Natural Heritage Program, June 8, 2020 and email correspondence from Jessy Coltrane, Wildlife Biologist, FWP, 6/15/20
C. SHPO Letter, June 11, 2020
D. Dust Control Plan
E. Fire prevention and fuels reduction plan
F. Draft CC&R's – Jewel of Echo

MAPS/PLANS

Vicinity
FIRMette (FIRM Panels 2310J)
Slope Map
Preliminary Plat